UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/553,969	04/21/2000	Donald G. Wallace	17067-002040	6560

44183 7590 09/25/2008

BAXTER HEALTHCARE CORPORATION
ONE BAXTER PARKWAY
MAIL STOP DF2-2E
DEERFIELD, IL 60015

EXAMINER	
CHANNAVAJJALA, LAKSHMI SARADA	
ART UNIT	PAPER NUMBER
1611	

MAIL DATE	DELIVERY MODE
09/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/553,969	WALLACE ET AL.	
	Examiner	Art Unit	
	Lakshmi S. Channavajjala	1611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 19-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 19-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8-6-08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Receipt of response dated 6-12-08 and IDS dated 8-6-08 is acknowledged.

Claims 1 and 19-36 are pending in the instant application.

The following rejection of record has been maintained.

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 19-21, 23-26 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,124,705 to Rothman et al.

Rothman et al (hereafter Rothman) discloses an agent for intravascular administration consisting of a suspension of minute particles of a polysaccharide that is blocks the finer blood vessels (abstract, lines bridging col. 1-2 and paragraph bridging col. 11-col. 12). The polysaccharide of Rothman is biodegradable and resorbable because Rothman describes that the hydrophilic swellable particles are broken down by alpha-amylase in the blood plasma (col. 2, l 4-16) and further, according to the instant claim 35, the ability to be resorbable is inherent to the polysaccharide of Rothman. Similarly, the ability to swell is a property inherent to the polysaccharides described by Rothman. For the claimed particle sizes, Rothman teaches a size range of 0.1 to 300 microns (col. 5, L 18-36), which overlaps with the claimed range of 0.01 mm to 5 mm (10 microns-5000 microns). Thus, the gels of Rothman meet all the characteristics that are claimed in claims 1, and 24. Rothman further

describes that the polymeric gel particles are produced by disintegrating the larger pieces of gel, which reads on fragmented gel claimed in the instant (col. 8, L 3-14). With respect to the limitations of "single phase" and "substantially free form a free aqueous phase", Rothman does not teach including any other substance or component in the polysaccharide suspension other than for the formation of the gel or the ability to form a gel, and also states that the gels contain more than 50% by weight water but less than 98%water (col. 4, L 58-70), which implies that the gels do not contain any free water. Rothman discloses that the particulate suspension is injected intravascularly (col. 8, L 31-48), in conjunction with a therapeutic (col. 9, L 25-34) or a diagnostic agent (col. 8, L 49 through col. 9, L 24). Further the particulate suspension containing polysaccharide particles (of Rothman) read on a single phase aqueous colloid and are swellable upon administration and hence the presence of aqueous solution (for suspending the particles) and hence read on the claimed "free from a free aqueous phase". The therapeutic or diagnostic agents of Rothman read on instant claim 25 and particularly mention coagulation factors of claim 26 (col. 9, line 28-30).

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 19-21, 23-24, 34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,482,386 to Wittwer et al (Wittwer).

5. Wittwer et al teach conditioned water-swellable hydrocolloids for use in mechanical forming processes such as processes such as die molding or injection molding in preparing shaped articles (abstract, col. 10 and col. 2, L 66 through col. 3, l 13). Wittwer teaches number polymers such as protein or non-biological polymers for preparing swellable hydrocolloids including gelatin (col. 2, L 37-57). Example in col. 4 describes the preparation of gelating preparation, where in gelatin is conditioned or hydrated to 15% water content and the gelating granules. Further, Wittwer teaches that gelatin is in a granulated form with a mean particle diameter of 0.2 to 4 mm. (claim 6). With respect to the degradation claimed, the property of degradation is associated with gelatin. Wittwer does not teach the hydrocolloid in an applicator but suggests that the granulated gelatin is coupled with a molding unit such as an injection molding machine and therefore the claimed hydrogel being in an applicator with an extrusion orifice so as to be able to inject gelatin hydrocolloid would have been within the scope of a skilled artisan. Even though Wittwer fails to exemplify other swellable polymers, it would have been obvious for a skilled artisan to choose a biological polymer such as protein or a non-biological polymer or a synthetic polymer to prepare swellable hydrocolloids because Wittwer suggests that the process of preparing a swellable hydrocolloids of predetermined water content, that are suitable for preparing moldable or shaped articles can also be prepared with synthetic polymers.

6. **Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman et al in view of US 4,515,637 to Cioca**.

Rothman fails to teach the specific clotting agent, thrombin of claim 27, but teaches inclusion of clotting agents in the swellable gels for affecting coagulation.

Cioca teaches thrombin as an effective clotting factor for stoppage of bleeding locally (col. 2). Therefore, it would have been obvious for one of an ordinary skill in the art at the time of the instant invention was made to include thrombin as a coagulation factor in the hydrogel composition of Rothman with an expectation of achieving the desired clotting or coagulation.

7. **Claims 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman et al as applied to claims 1, 19-21, 23-24 and 34 above, and further in view of US 4482386 to Wittwer and US 6,129,761 to Hubbell.**

8. Rothman, discussed above, teach polysaccharide swellable gels in combination with active agents or hydrocolloids comprising combinations of swellable polymers. However, Rothman fails to teach combinations of polymers of claims 28-33 and lacks gelatin or the synthetic polymers.

9. Wittwer teaches gelatin or synthetic polymers that swellable and also suitable for injection molding to prepare shaped articles. Wittwer teaches natural and synthetic polymers are suitable for the preparation of injectable hydrocolloids, but fails to teach an active agent (claim 25) such as a clotting agent (claim 26), in combination with gelatin or other polymers.

10. Hubbell teaches injectable hydrogel compositions useful for delivering cells or other bioactive agents via injection and thus provide engraftment and a 3-D template for new cell growth, custom molding of implants as well as implantation of tissues (abstract and col. 5, L 5-23) . The polymers of Hubbell include biodegradable, biocompatible hydrogels such as polylactides, polyanhydrides, polysaccharides and natural polymers such as gelatin, collagen, fibrin etc (col. 7-8), all of which described in the instant. Hubbell also teaches combination or mixtures of polymers (col. 8, L 63 –col. 9, L 12). It would have been obvious for one of an ordinary skill in the art at the time of the instant invention was made to combine other synthetic and natural swellable polymers of Wittwer or Hubbell with the polysaccharide swellable polymers of Rothman for administration because Wittwer suggests that protein as well synthetic polymers are suitable for preparing injection moldable articles and Hubbell suggests several swellable hydrogel polymers (both natural polymers such as gelatin and synthetic polymers) as well as their combinations for administering active agents to the localized or for tissue remodeling or preparing shaped moldable articles. Accordingly, a skilled artisan would have expected to be able to administer active agents or promote tissue engraftment with individual as well as mixtures of hydrogel polymers.

11. **Claims 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4482386 to Wittwer in view of Rothman et al as applied to claims 1, 19-21, 23-24 and 34-35 above, and further in view of US 4,515,637 to Cioca**.

12. **Examiner notes that instant claim 26 requires a clotting agent, wherein the clotting agent is thrombin (claim 27). Instant claims 28 (protein polymer) and 29 (gelatin) are dependent from claim 26, which is turn is indirectly dependent from claim 25.**

13. Wittwer teaches gelatin or synthetic polymers that swellable and also suitable for injection molding to prepare shaped articles. Wittwer teaches natural and synthetic polymers are suitable for the preparation of injectable hydrocolloids, but fails to teach an active agent (claim 25) such as a clotting agent (claim 26) or thrombin.

14. Rothman, discussed above, teach polysaccharide swellable gels in combination with active agents or hydrocolloids comprising combinations of swellable polymers. Rothman fails to teach the specific clotting agent, thrombin of claim 27, but teaches inclusion of clotting agents in the swellable gels for affecting coagulation.

Cioca teaches thrombin as an effective clotting factor for stoppage of bleeding locally (col. 2). Therefore, it would have been obvious for one of an ordinary skill in the art at the time of the instant invention was made to use swellable hydrocolloids of Wittwer containing gelatin polymer for delivering active agents such as coagulating factors to the desired site because Rothman suggests swellable hydrogels for delivering therapeutic agents such as coagulating agents. Further, it would have been obvious for a skilled artisan to include thrombin as a coagulation factor in the hydrogel composition of Wittwer with an expectation of achieving the desired clotting or coagulation.

Response to Arguments

1. Applicant's arguments filed 6-12-08 have been fully considered but they are not persuasive.

2. Rejection under 35 USC 102- Applicants argue that Rothman's gels contain water and that it is improper to assume that if an item contains a percentage of water by weight, the item therefore has no free water. For example, a water-soaked sea sponge may contain 98% water by weight, yet water contained in the sponge is in a free aqueous phase. Similarly, a bottle of mineral water may contain a 98% water by weight, yet water contained within the bottle is in a free aqueous phase. While the arguments have been considered they are not found persuasive because a bottle of water is not comparable to fine particulate crosslinked polysaccharide in a swollen state and which block the finer blood vessels of the body because a bottled water neither has particulate polysaccharide nor performs like the one. Applicants further argue that to establish inherency the office must provide rationale or inherency. The fact that Rothman inherently teaches the claimed product comes from the disclosure that Rothman teaches a polymeric gel obtained in particle form by producing the larger pieces and then disintegrating said product (col. 8, L 3-14). In the above description, Rothman does not teach any free water associated with the particulate polysaccharide gels. Hence the product of Rothman is free of free aqueous phase. Applicants argue that Rothman's meshed three dimensional network of polysaccharide molecules has not been shown to be in a single phase aqueous colloid, which is substantially free from a free aqueous phase, as

presently claimed. However, the above description clearly shows that there is no free water associated and applicants' arguments are not therefore persuasive. With respect to the argument that Rothman's gel particles are suspended in water, in addition to the above cited disclosure of Rothman at col. 8, L 4-14), while Rothman teaches administration of gel particles, the disclosure at col. 13, L-col. 14, L 13 does show a colloidal polysaccharide gel without any free water, which clearly reads on the claimed extrudable fragment. It is argued that pending dependent claims 19-21 and 23-26 depend from base claim 1, and are therefore allowable as depending from an allowable base claim, as well as for the novel combination of elements they recite. Further, it is argued that claim 35 recites a single phase aqueous colloid which is substantially free from a free aqueous phase, and thus is allowable for at least the reasons give above. However, the arguments regarding the limitation of "free from free aqueous phase" have been addressed and hence the claims have been rejected. With respect to the swollen state limitations, applicants have not shown that the gel of Rothman is not swollen as claimed and hence the rejection has been maintained.

Rejection under 35 USC 103(a) –Wittwer-

It is argued that Wittwer describes a water-swellable hydrocolloid but has not been shown that Wittwer describes a single phase aqueous colloid which is substantially free from a free aqueous phase, as presently claimed. It is argued that claim 6 of Wittwer describes a particle size of 0.2 to 4 mm, however, it has not been shown that this particle size refers to a fully hydrated particle with an

equilibrium swell from 400% to 5000%. It is argued that the office provides no evidence that Wittwer describes an in vivo degradation time of less than one year as presently claimed. It is argued that there is no reason has been identified that that would have prompted the artisan to combine the elements in the way the presently claimed new invention does. Hence, a prima facie case of obviousness has not been established with regard to current claim 1 and that pending dependent claims 19-21 and 23-26 depend from base claim 1, and are therefore allowable as depending from an allowable base claim.

Applicants' arguments are not persuasive because Wittwer's disclosure is concerned with water-swellable hydrocolloid and particularly, the product applied for injection molding in a swellable state. Accordingly, applicants' arguments without any evidence to contrary, that the particles of Wittwer are not swollen are moot. The argument regarding free aqueous phase is not persuasive because Wittwer only teaches gels for injection molding and not the addition of any suspensions or carriers for such utility. Additionally, Wittwer suggests varying water swellability (col. 2, l 57-60) and also suggests obtaining particles with higher water content (col. 3, L 11). Accordingly, a skilled artisan would have been able to produce gelatin hydrocolloid gels with the desired amount of water and obtain an even distribution of water within the granules. With reference to claim 6 of Wittwer, it is to be noted that the claims of Wittwer are directed to a method of preparing a water-swellable hydrocolloid by conditioning with water and hence are not dry particles. For the argument regarding in vivo degradation, mere

arguments without any evidence to show that the gelatin hydrocolloid gels do not degrade at the claimed rate are not persuasive.

Claim 27 was rejected under 35 U.S.C. § 103(a) as allegedly obvious over Rothman in view of USPN 4,515,637 to Cioca.

Claims 28-33 were rejected under 35 U.S.C. §103(a) as allegedly obvious over Rothman in view of Wittwer and USPN 6,129,761 to Hubbell.

Claims 25-29 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over Wittwer in view of Rothman and Cioca.

Applicant argument that Rothman or Wittwer do not teach or suggest a single phase aqueous colloid substantially free from a free aqueous phase and hence Cioca or Hubbell have not been shown to remedy this deficiency is not persuasive. Applicants' arguments regarding Rothman and Wittwer have been addressed above and the argument does not specifically argue the teachings of Cioca or Hubbell.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory

period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lakshmi S. Channavajjala whose telephone number is 571-272-0591. The examiner can normally be reached on 9.00 AM - 5.30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sharmila G. Landau can be reached on 571-272-0614. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lakshmi S Channavajjala/
Primary Examiner,
Art Unit 1611
September 14, 2008